REMARKS

The present invention relates to methods for detecting a mammalian troponin molecule and for distinguishing between a mammalian troponin molecule and an avian troponin molecule in a sample, such as animal feed. The methods include assays that employ ligands for the detection of mammalian troponin. Claims 1-19 are pending. Claims 1-9 and 19 are withdrawn as being directed to a non-elected invention. Claims 10 and 17 are currently amended. Support for the following remarks is found throughout the specification, and no new matter is introduced. In light of the following remarks, favorable consideration of the present application is respectfully requested.

Claim rejections under 35 U.S.C. §112

In the Office Action mailed January 24, 2007 the Examiner rejected Claim 17 under 35 U.S.C. §112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors at the time the application was filed, had possession of the claimed invention. Applicants respectfully submit that amendments to the claims overcome the rejection.

In an effort to facilitate examination, applicants have removed the term "or combinations thereof" from Claim 17. Applicants submit they have overcome the rejection under 35 U.S.C. §112, first paragraph, and request withdrawal of the rejection.

Claim rejections under 35 U.S.C. §102(b)

In the Non-Final Office Action mailed January 24, 2007, the Examiner rejected Claims 10-13 under 35 U.S.C. §102(b), as anticipated by Takahashi *et al.,* (Clin. Biochem. (1996) vol 29, pp 301-308); hereinafter "Takahashi"). Applicants respectfully submit that amendment to the claims overcome the rejection.

Applicants respectfully submit that Claim 10 is amended herein to clarify that the ligand reacts with or binds to an amino acid sequence selected from the group consisting of **SEQ ID NOS: 2-6, 9-13 and 15-35**. Support for the above amendment can be found on, at least, page 7, lines 10-12, page 15, lines 17-18, page 19, lines 6-8 and original Claim 5.

Takahashi is directed to an immunoassay for measuring skeletal troponin I using isoform-specific antibodies. Takahashi fails to teach or suggest that the ligand reacts with or binds to an amino acid of **SEQ ID NOS: 2-6, 9-13 and 15-35**. Takahashi characterizes the twelve monoclonal antibodies raised, as eight having specificity against human fsTnI and the remaining four reacted with both skeletal and cardiac troponin I. More importantly, epitope studies indicated that there are **at least seven distinctly different epitopes on fast twitch TnI**. (see page 303, Characterization of monoclonal antibodies paragraph). As discussed above, the claims of the present application are directed to a ligand, wherein the ligand reacts with or binds to an amino acid sequence selected from **SEQ ID NOS: 2-6, 9-13 and 15-35**. Applicants conclude that the claimed subject matter is not anticipated by Takahashi. Accordingly, applicants respectfully submit they have overcome the rejection under 35 U.S.C. §102(b) and request withdrawal thereof.

In the Non-Final Office Action mailed January 24, 2007, the Examiner rejected Claims 10, 11, 13, 17 and 18 under 35 U.S.C. §102(b), as anticipated by Chen *et al.*, (Meat Science (2002) vol 61, pp 55-60, available online December 21, 2001); hereinafter "Chen"). Applicants respectfully submit that amendment to the claims overcome the rejection.

Applicants respectfully submit that Claim 10 is amended herein to clarify that the ligand reacts with or binds to an amino acid sequence selected from **SEQ ID NOS: 2-6, 9-13 and 15-35**.

Chen is directed to the development of a thermostable species marker protein for porcine troponin I. Chen states that the development of monoclonal antibodies for the identification of different meats has been hindered, mainly due to limited information on the selection of appropriate antigens (see introduction paragraph). This supports the notion that it was known to one of ordinary skill in the art during December, 2001, that production of species-specific monoclonal antibodies **would be ineffective** because the chance of success in selecting a specific clone by screening with crude antigen is **remote** (see Chen introduction paragraph). It is to the applicants credit that the instant invention provides an assay to identify mammalian troponin molecules in a sample through the use of a ligand that differentiates between mammalian

troponin molecules and avian troponin molecules. Applicants respectfully submit that Chen fails to teach or suggest a ligand that reacts with or binds to an amino acid of **SEQ ID NOS: 2-6, 9-13 and 15-35**. Applicants conclude that the claimed subject matter is not anticipated by Chen. Accordingly, applicants respectfully submit they have overcome the rejection under 35 U.S.C. §102(b) and request withdrawal thereof.

In the Non-Final Office Action mailed January 24, 2007, the Examiner rejected Claims 10-16 under 35 U.S.C. §102(b), as anticipated by Sheng *et al.*, (J. of Bio. Chem (1992) vol 267, pp 25407-25413); hereinafter "Sheng"). Applicants respectfully submit that amendment to the claims overcome the rejection.

Applicants respectfully submit that Claim 10 is amended herein to clarify that the ligand reacts with or binds to an amino acid sequence selected from **SEQ ID NOS: 2-6, 9-13 and 15-35**.

Sheng is directed to the isolation and expression of rabbit skeletal muscle troponin I. The Examiner concluded Sheng teaches a rabbit fast twitch skeletal muscle TnI monoclonal antibody ligand specific for troponin having SEQ ID NO: 2. Applicants respectfully traverse.

Applicants respectfully assert a comparison of **SEQ ID NO:2** of the instant invention with the amino acid sequence of rabbit skeletal muscle TnI (Figure 1 of Sheng) shows that there are **at least ten amino acids that are different between the two sequences**. To facilitate examination, applicants respectfully submit amino acid residues **35, 39, 46, 47, 48, 53, 54, 56, 59** and **84** of Sheng (Figure 1) are different to the amino acid residues of **SEQ ID NO:2** of the instant application.

It is to the applicants credit that the instant invention provides an assay to identify mammalian troponin molecules in a sample through the use of a ligand that differentiates between mammalian troponin molecules and avian troponin molecules. Applicants respectfully submit that Sheng fails to teach or suggest a ligand that reacts with or binds to an amino acid of **SEQ ID NOS: 2-6, 9-13 and 15-35**. Applicants conclude that the claimed subject matter is not anticipated by Sheng. Accordingly, applicants respectfully submit they have traversed the rejection under 35 U.S.C. §102(b) and request withdrawal thereof.

CONCLUSION

Based upon the amendments and remarks provided above, applicants believe that the pending claims are novel and non-obvious. A Notice of Allowance is therefore respectfully solicited.

No additional fees are believed due; however, the Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment, to Deposit Account No. 11-0855.

If the Examiner believes any informalities remain in the application that may be corrected by Examiner's Amendment, or there are any other issues that can be resolved by telephone interview, a telephone call to the undersigned agent at (404) 815-6500 is respectfully solicited.

Respectfully submitted,

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